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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,308	10/31/2003	John F. O'Connor JR.	3135-24	5427

7590 03/03/2005

Russel H. Marvin
Torrington Research Company
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EXAMINER

EDGAR, RICHARD A

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 03/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,308

Applicant(s)

O'CONNOR, JOHN F.

Examiner

Richard Edgar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003 under 37 C.F.R. §1.53(b).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. § 119(e) as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence(s) of the specification or in an application data sheet by identifying the prior application by application number (37 CFR 1.78(a)(2) and (a)(5)).

Claim Objections

Claim 4 is objected to because of the following informalities: the claim must end with a period (see MPEP §608.01(m)). Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 7, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Laid-open Patent Application 6-74195.

The Japanese Laid-open Patent Application discloses in Figure 4, an injection molded centrifugal impeller comprising a circumaxially spaced series of air moving blades 3 each having inner and outer edges and longitudinally extending inner and outer portions on opposite sides of an intermediate longitudinal line, an end ring 4 at the

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inlet end of the impeller formed integrally with and interconnecting the blades 3, said ring having an inner diameter D2 greater than that of the blade inner edges and an outer diameter greater than that of the blade outer edges D3, and a back plate 1 formed integrally with and interconnecting the blades 3 at an end thereof opposite the inlet ring 4, the diameter D1 of the back plate 1 being at least equal to that of the inner edges of the blades 3, and the foregoing characteristics of the impeller accommodating the molding of the blade inner portions in the core of the injection mold and the molding of the blade outer portions in the cavity of the mold (see paragraphs 23-25 of the translated document). The diameter D1 of the back plate 4 is larger than that of the inner edges of the blades 3, and wherein the blades 3 have notches at their inner edges adjacent the back plate 1 to receive the same (see Figure 5). The blades 3 are notched to receive an inner edge portion of the end ring 4 (see Figure 5). The blades 3 have rounded inner edges (see profile in Figure 5). The impeller blades are forwardly curved (see curved configuration in Figure 5). The outer portions of the blades (radially outer portions) are thinner than the inner portions (radially inner portions) thereof (see airfoil profile shown in Figure 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Laid-open Patent Application 6-74195.

The Japanese Laid-open Patent Application discloses in Figure 4, an injection molded centrifugal impeller comprising a circumaxially spaced series of air moving blades 3 each having inner and outer edges and longitudinally extending inner and outer portions on opposite sides of an intermediate longitudinal line, an end ring 4 at the inlet end of the impeller formed integrally with and interconnecting the blades 3, said ring having an inner diameter D2 greater than that of the blade inner edges and an outer diameter greater than that of the blade outer edges D3, and a back plate 1 formed integrally with and interconnecting the blades 3 at an end thereof opposite the inlet ring 4, the diameter D1 of the back plate 1 being at least equal to that of the inner edges of the blades 3, and the foregoing characteristics of the impeller accommodating the molding of the blade inner portions in the core of the injection mold and the molding of the blade outer portions in the cavity of the mold (see paragraphs 23-25 of the translated document).

The Japanese Laid-open Patent Application does not recite the inner diameter of the inlet ring is approximately 2 to 5 percent less than the diameter of the outer edges of the blades, nor the outer diameter of the inlet ring is approximately 2 to 5 percent greater than that of the outer edges of the blades.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to make the inner diameter of the inlet ring approximately 2 to 5 percent less than the diameter of the outer edges of the

blades, or make the outer diameter of the inlet ring approximately 2 to 5 percent greater than that of the outer edges of the blades, because Applicant has not disclosed that making the inner diameter of the inlet ring approximately 2 to 5 percent less than the diameter of the outer edges of the blades and making the outer diameter of the inlet ring approximately 2 to 5 percent greater than that of the outer edges of the blades provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the dimensions shown by the Japanese Laid-open Patent Application or the claimed 2 to 5 percentage range because both dimensions perform the same function of making a one-piece molded fan with a rigid inlet ring attached to the blades.

Therefore, it would have been an obvious matter of design choice to modify the Japanese Laid-open Patent Application to obtain the invention as specified in claims 2-3 and 10-11.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Laid-open Patent Application 6-74195 as applied to claim 1 above, and further in view of United States Patent No. 5,927,947 (Botros hereinafter).

The Japanese Laid-open Patent Application discloses in Figure 4, an injection molded centrifugal impeller comprising a circumaxially spaced series of air moving blades 3 each having inner and outer edges and longitudinally extending inner and outer portions on opposite sides of an intermediate longitudinal line, an end ring 4 at the

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inlet end of the impeller formed integrally with and interconnecting the blades 3, said ring having an inner diameter D2 greater than that of the blade inner edges and an outer diameter greater than that of the blade outer edges D3, and a back plate 1 formed integrally with and interconnecting the blades 3 at an end thereof opposite the inlet ring 4, the diameter D1 of the back plate 1 being at least equal to that of the inner edges of the blades 3, and the foregoing characteristics of the impeller accommodating the molding of the blade inner portions in the core of the injection mold and the molding of the blade outer portions in the cavity of the mold (see paragraphs 23-25 of the translated document).

The Japanese Laid-open Patent Application does not teach the end ring having an axially extending portion.

Botros shows a centrifugal impeller having an end ring 16 wherein the end ring has a short portion 44 extending axially beyond the ends of the blades 14 for the purpose of increasing the flexural strength of the ring (see col. 3, lines 37-41).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-4816. The examiner can normally be reached on Monday thru Friday, 8:00 am until 4:00 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard Edgar
Examiner
Art Unit 3745

RE



EDWARD K. LOOK
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3/1/05